



ROMÂNIA
MINISTERUL EDUCAȚIEI ȘI CERCETĂRII
UNIVERSITATEA DIN CRAIOVA

FACULTATEA DE AUTOMATICĂ, CALCULATOARE ȘI ELECTRONICĂ
DEPARTAMENTUL DE CALCULATOARE ȘI TEHNOLOGIA INFORMAȚIEI



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DISCIPLINE ACADEMIC SHEET
ACADEMIC YEAR 2025 – 2026

1. PROGRAMME DATA

1.1. Higher Education Institution	UNIVERSITY OF CRAIOVA
1.2. Faculty	Automation, Computers and Electronics
1.3. Department	Computers and Information Technology
1.4. Field of Study	Computers and Information Technology
1.5. Study level	L(License / Undergraduate)
1.6. Organizational form	IF
1.7. Study Program (name/code) /Qualification	Computers / L2060101010

2. Discipline data

2.1 Discipline Name	Computer Networks						
2.2 Course Activities Holder	Dan Mancaș						
2.3 Practical Activities Holder	Ionuț Murărețu						
2.4 Study Year	3	2.5 Semester	2	2.6 Evaluation type	E	2.7 Discipline regime	DOB

3. Estimated total time (hours per semester of teaching activities)

3.1 Number of hours per week	4	in which: 3.2 course	2	3.3 seminar/laboratory/project	0/2/0
3.4 Total hours of curriculum	56	in which: 3.5 course	28	3.6 seminar/laboratory/project	0/28/0
3.7 Time distribution					hours
▪ Study after manual, course support, bibliography and notes					18
▪ Additional documentation in library, on specialized electronic platforms and field					-
▪ Training seminars / labs, homework, portfolios and essays					10
▪ Tutoring					-
▪ Examinations					10
▪ Other activities: consultations, student meetings					6
Total hours per individual activities	44				
3.8 Total hours per semester ⁵	100				
3.9 Number of credits ⁶	4				

4. Preconditions (where appropriate)

4.1 of curriculum	
4.2 of competence	

5. Conditions (where appropriate)

5.1. of the course ⁹	Physical presence
5.2. of seminar/ laboratory/project ⁹	Physical presence

6. COURSE OBJECTIVES – expected learning outcomes that are supported by completing and passing the course

Knowledge	Student: 1. Describes, identifies, and summarizes basic concepts and methods related to computer networks, network devices, routing protocols, as well as their application to concrete problems. 2. Identifies and explains the fundamental concepts, theories, and methods of the computer networks field.
Skills (Abilities)	Student: 1. Evaluates, based on specific performance criteria, the type of network devices, network architecture, and the appropriate usage required for the efficient solution of concrete problems. 2. Selects and applies criteria, principles, and evaluation methods for identifying, simulating, and experimenting with processes in the field of computer networks.
Responsibility and autonomy	Student: 1. Displays honourable, responsible, and ethical behaviour, in accordance with the law, to uphold the reputation of the profession. 2. Selects and analyses bibliographic sources specific to the field. 3. Demonstrates autonomy in learning and addressing issues specific to the domain.

7. Content

7.1 COURSE (content units)	Meeting way	No hours	Teaching methods
Cap. 1. IEEE 802.3. Ethernet 1.2 Carrier Sensing Multiple Access with Collision Detection (CSMA/CD) 1.3 Architectural perspectives 1.4 Media Access Control (MAC) specifications 1.6 Signals 1.7 Communication media for Ethernet implementations 1.8 Fast Ethernet: 100BaseT 1.9 Gigabit Ethernet	online	8	PowerPoint presentations
Cap. 2. IP, ARP, ICMP 2.2 TCP/IP architectural model 2.3 Internet Protocol (IP) 2.4 Address Resolution Protocol (ARP) 2.5. ICMPv4 and ICMPv6: Internet Control Message Protocol	online	6	
Cap.3. Transport level protocols: UDP si TCP 3.1 Ports and sockets 3.2 User Datagram Protocol (UDP) 3.3 Transmission Control Protocol (TCP)	face to face	6	
Cap. 4. Application layer protocols: DNS, WWW, E-mail 4.1 Domain Name System (DNS) 4.2 World Wide Web (www) 4.3 Electronic mail (e-mail)	face to face	8	
Bibliography ⁸ 1. Chow, W. (1983),Computer Communications, Vol. I:Principles, Prentice-Hall 2. Cooper, E. (1986), Broadband Network Technology, Sytek-Prentice-Hall 3. Davies, D. W. and Barber, D.L.A. (1973), Communication Networks for Computers, Wiley 4. Halsall, F. (1988), Data Communications, Computer Networks and OSI, Addison Wesley 5. IEEE (1985), Logical Link Control – IEEE 802.2 6. Peebles, P. Z. (1987), Digital Communication Systems, Prentice-Hall 7. Peterson, W. W. (1961), Error Correcting Codes, MIT Press 8. Schwartz, M. (1987), Telecommunication Networks: Protocols, Modelling and Analysis, Addison-Wesley 9. Sloman, M. and Kramer, J. (1987), Distributed Systems and Computer Networks, Prentice-Hall 10. Stallings, W. (1985), Data and Computer Communications, Macmillan 11. Stallings, W. (1987). Local Networks – An Introduction, Macmillan			

12. Tanenbaum, A. (1981), Computer Networks, Prentice-Hall			
7.2 Practical activities (topics/homework)	Meeting way	No hours	Teaching methods
IP address configuration	online	2	Packet Tracer Simulator and Cisco and Juniper switches and routers
Subnetting	online	2	
IP protocol	online	4	
ICMP protocol	online	4	
ARP protocol	face to face	4	
DNS	face to face	4	
E-mail	face to face	4	
World Wide Web	face to face	4	
Bibliography ⁸			
1. Dan Mancas: Computer Networks			
2. James Kurose and Keith Ross, Computer Networking: A Top-Down Approach (8th Edition), 2021			
3. Larry L. Peterson, Bruce S. Davie: Computer Networks; A Systems Approach, 2021			
4. Carl Malamud: The Future of the Internet Protocol			
5. Craig Partridge: Gigabit Networking			
6. Charlie Kaufman, et al.: Network Security Private Communication in a PUBLIC World			

8. Correlating the content of the discipline with the expectations of representatives from the epistemic community, professional associations and representative employers in the field related to the program

The course presents the basic concepts and create the fundament for specific courses which are corelated to the labour market.

9. Evaluation

Activity Type	9.1 Evaluation criteria	9.2 Evaluation methods	9.3 Final mark weight
9.4 Course	Minimum 50%	Written paper	70%
9.5 Practical activities	S:		
	L: Minimum 50%	The activity is evaluated by marks from 1 to 10	30%
	Pr:		
9.6 Minimum standard of performance (the minimum knowledge necessary to promote discipline and how to check the knowledge acquiring)			
Basic knowledge on the course and laboratory topics.			

Date of Completion	Signature of the Course Activities Holder,	Signature of the Practical Activities Holder,
23.08.2025		

Date of Approval in the Department	Signature of the Department Director,
25.08.2025	Ș.I.dr.ing. Nicolae ENESCU

Date of Approval in the Faculty	Signature of the Dean,
	Prof.dr.ing. Dorin ȘENDRESCU

